

WHAT IS CLAIMED IS:

1. A brush seal, comprising:  
a side plate;  
a back plate having a perimeter;  
a bristle ring disposed between the side plate and the back plate; and  
a plurality of fasteners securing the back plate to the side plate, each fastener including a head, the head engaging only a perimeter of the back plate and pressing the back plate and bristle ring against the side plate.
2. The brush seal of claim 1, wherein the side plate is annular in shape and includes a plurality of apertures adapted to receive the plurality of fasteners.
3. The brush seal of claim 1, wherein the back plate includes a recess for receipt of the bristle ring.
4. The brush seal of claim 1, wherein the side plate includes a recess forming a pinch point.
5. The brush seal of claim 1, wherein the plurality of fasteners are threaded.
6. The brush seal of claim 1, wherein the plurality of fasteners are cap screws.
7. The brush seal of claim 1, wherein at least one of the side plate, back plate, and bristle ring is made of a material different than a material from which the other two of the side plate, back plate, and bristle ring are made.

8. The brush seal of claim 7, wherein at least one of the side plate, back plate, and bristle ring is made of metal, and at least one of the side plate, back plate, and bristle ring is made of plastic.

9. A method of forming a brush seal, comprising:  
positioning a bristle ring proximate a side plate;  
overlaying a back plate atop the bristle ring; and  
securing the back plate to the side plate using fasteners engaging only a  
perimeter of the back plate.
10. The method of claim 9, wherein the back plate is secured to the side  
plate using threaded fasteners.
11. The method of claim 10, wherein each threaded fastener includes a  
head, each head clamping the back plate to the side plate.
12. The method of claim 11, wherein the back plate includes a reduced  
thickness lip, the fastener heads engaging the lip.
13. The method of claim 9, wherein the back plate includes a recess  
adapted to receive the bristle ring.
14. The method of claim 9, further including the step of mounting the  
brush seal in a gas turbine engine.
15. The method of claim 9, further including tack welding the fastener  
heads to one of the back plate and side plate.
16. The method of claim 9, further including disassembling the brush seal  
by removing the fasteners, replacing at least one of the back plate, side plate and bristle ring,  
and reassembling the brush seal.
17. The method of claim 16, wherein the at least one of back plate, side  
plate, and bristle ring is plastic.

18. A modular brush seal, comprising:
- a side plate;
  - a back plate;
  - a bristle ring secured between the side plate and the back plate; and
  - means for removably securing the side plate, back plate and bristle ring together without penetrating the bristle ring and one of the side plates and back plate.
19. The modular brush seal of claim 18, wherein the means for removably securing includes a plurality of threaded fasteners.
20. The modular brush seal of claim 19, wherein the plurality of threaded fasteners each include a head, each head including an internal shoulder, each shoulder engaging only a perimeter of the back plate.
21. The modular brush seal of claim 20, wherein the back plate perimeter has a first thickness and an adjoining annulus of the back plate has a second thickness, the first thickness plus a thickness of the fastener head being less than the second thickness.
22. The modular brush seal of claim 18, wherein the back plate includes a recess, the bristle ring being positioned within the recess.
23. The modular brush seal of claim 18, wherein the side plate, back plate and bristle ring are made of different materials.
24. The modular brush seal of claim 23, wherein at least one of the side plate, back plate and bristle ring is made of metal, and at least one of the side plate, back plate and bristle ring is made of plastic.

25. A gas turbine engine, comprising:

a compression section;

a combustion section;

a turbine section;

a shaft assembly connecting the compression section and the turbine section;

an engine casing surrounding the compression section, combustion section, turbine section, and shaft; and

a brush seal positioned between one of the compression section, combustion section and turbine section and one of the shaft and engine casing, the brush seal including a side plate, a back plate having a perimeter, a bristle ring disposed between the side plate and the back plate, and a plurality of fasteners securing the back plate to the side plate, each fastener including a head engaging only the back plate perimeter and pressing the back plate and bristle ring against the side plate.